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09/814,331	03/21/2001	Kong Fok Chong	21046.P007	3789

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EXAMINER

PARKER, FREDERICK JOHN

ART UNIT	PAPER NUMBER
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1762

7

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/814,331

Applicant(s)

Examiner

Group Art Unit

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE — 3 — MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 1/14/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-26 is/are pending in the application.
- Of the above claim(s) 14-26 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-13 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of claims 1-13 in Paper No. 6 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for removing surface porosity by infiltration (spec page 7, 10-20 and elsewhere), does not reasonably provide enablement for removal of surface porosity by mechanical removal, thermal/ laser surface sealing, etc. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to carry out the

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invention commensurate in scope with these claims. Specification is enabled only for removal of surface porosity by infiltration of polymeric materials.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-2,4-5,8-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 1 is vague and indefinite because it is unclear how surface porosity is "removed" in (a);

- Claims 1,2,4,5,9-12: "said surface" lacks proper antecedent basis, and further it is unclear which surface is intended in each case, e.g. porous surface, smoothened surface, sanded surface, etc.

- Claim 3 is vague and indefinite because it is unclear to what the layer of lacquer is applied.

- Claims 4,5,11,12 are vague and indefinite because it is unclear which surface/s is color printed and texturized; it is further confusing how the steps of 4-5 and 11-12 are related because they are both labeled as step "(f)".

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- Claim 8: "curable polymer" lacks proper antecedent basis.
- Claim 9, in (c) it is unclear what is meant by a "smooth" surface since the relative term "smooth" does not clearly convey the intended degree of allowable roughness/ irregularity.
- Claim 11 is vague and indefinite because it is unclear if the lacquer layer is the same as, or different from, the hardener layer in view of specification page 3, line 24.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C.

102 that form the basis for the rejections under this section made in this Office

action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1,2 are rejected under 35 U.S.C. 102(B) as being anticipated by

Leach et al US 54706099. This rejection assumes the interpretation that (a) and

(b) may be carried out using a single material, as permitted by the claim

language.

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Leach et al discloses a method for repairing/ treating a porous plastic object containing porosity (abstract, line 10) by applying powder coating material to infiltrate the porosity or other defects so that a normal surface contour is assumed, see Col. 2, 6-18 ("removing..." and "smoothing..." steps); and then heat curing the powder composition (col. 2, 25-30). The powder used may be epoxy or acrylic-based compositions with cross-linking agents (hardeners). Thus, the reference meets each and every limitation as set forth in claim 1.

As to claim 2, smoothing by sanding of rough or jagged features is disclosed on column 4, 7-18.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 3,5,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leach et al.

Leach et al is cited for the same reasons discussed above, which are incorporated herein.

Leach teaches on column 5, 35-37 that the coated product "can be painted, coated, or otherwise finished in accordance with the required production specifications", which would have reasonably suggested to one of ordinary skill to apply conventional coating materials such as a lacquer to attain a desired degree of gloss per claim 3, and to apply the paint by conventional methods such as spraying in accordance with claim 5. Furthermore, since Leach et al teaches a wide range of polymeric plastic materials, including those which are UV curable (col. 4, 39), it would have reasonably suggested UV-curable lacquers because they are conventional and known for topcoats on substrates.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Leach et al using conventional coating materials and coating means to provide an article with the required production specifications.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leach et al in view of Scott et al US 5937754.

Leach et al is cited for the same reasons discussed above, which are incorporated herein.

While Leach teaches on column 5, 35-37 that the coated product "can be painted, coated, or otherwise finished in accordance with the required production specifications", specific printing means to apply paints or other coatings are not cited. However, it is the Examiner's position that such teachings would have reasonably suggested to one of ordinary skill to apply conventional coatings such as decorative printings to the plastic surface using known methods, such as tampon/ pad printing which is taught by Scott et al to have been a known printing method for applying images onto plastic surfaces.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Leach et al using tampon

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printing to apply coating images as taught by Scott et al to provide an article with the required production requirements.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leach et al in view of the Admitted Prior Art (APA).

Leach et al is cited for the same reasons discussed above, which are incorporated herein. Forming the plastic object of nylon using selective laser sintering is not taught. However, page 1, 16-21 states that nylon plastic prototype articles a "typically produced using selective laser sintering" but assume an undesirable roughened surface. Since Leach et al teaches to infiltrate porosity and other defects in plastic objects without limitation, and the roughened surface of the APA articles are due to defects and porosity, it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Leach et al on nylon plastic prototype articles produced using selective laser sintering as disclosed by the APA because of the expectation on the part of one of ordinary skill to form a surface with a smooth, in-filled surface.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leach et al in view of Scheer et al US 4980235.

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Leach et al is cited for the same reasons discussed above, which are incorporated herein. Removing surface porosity using a liquid polymer is not cited.

Scheer et al teaches that a porous plastic (polypropylene) substrate may be impregnated with a polymeric solution and dried to form a non-porous surface. Since Leach et al uses a powder and Scheer et al uses a liquid polymeric material for the same purpose, that is to remove surface porosity from a plastic substrate, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Leach et al by substituting a liquid polymer as taught by Scheer et al for the polymer powder of Leach et al because of the expectation of achieving equivalent removal/sealing of surface porosity in plastic substrates.

15. The prior art does not teach nor reasonably suggest the subject matter of claims 9-13 to infiltrate porosity of a plastic porous and miniature stepped prototype with a curable polymer; followed by curing; and then applying a lacquer or other hardenable curable polymeric coating to fill up the miniature steps from prototype formation, resulting in a smooth surface; and curing the coating. Claims 9-13 are rejected under 35 USC 112 above, and their allowance

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would be subject to Applicant's amending to remove those rejections while maintaining the recited subject matter of the claims.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred J. Parker whose telephone number is (703) 308-3474.



Fred J. Parker

**FRED J. PARKER
PRIMARY EXAMINER**

January 28, 2003

9-814331